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SCOTT A. McBAIN
DELPHI TECHNOLOGIES, INC.
Legal Staff, Mail Code: 480-410-202
P.O. Box 5052
Troy, MI 48007-5052

EXAMINER	
BAREFORD, KATHERINE A	

ART UNIT	PAPER NUMBER
1762	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/808,245	HAN ET AL.
	Examiner	**Art Unit**
	Katherine A. Bareford	1762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 May 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10,21,22 and 24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Claims 11-20 and 23 are canceled

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *5/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The amendment filed May 4, 2007 has been received and entered. With the amendment, claims 11-20 and 23 have been canceled and claims 1-10, 21-22 and new claim 24 are pending for examination.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-3, 5-6 and 8-10 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 2, 6, 7 and 9-11 of copending Application No. 10/924,270. Although the conflicting claims are not

identical, they are not patentably distinct from each other because 10/924,270 provides all the features required by the claims of the present application and more. For example, in claim 1 of 10/924,270 all of the same features as claim 1 of the present application are required and a further requirement as to the structure of the supersonic converging/diverging nozzle is made, and this structure is not prevented by the present claims. The difference of the chamber, adherence and increased time and temperature would be inherent from using the described device. As to the injecting the particles parallel to a longitudinal axis of the gas/powder exchange chamber (claim 6 of the present application), it is the Examiner's position that this is well known in the art of kinetic spraying to be the conventional direction of injection.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

4. Claims 1-3, 5-6 and 8-10 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-3 and 7-11 of copending Application No. 10/999,581. Although the conflicting claims are not identical, they are not patentably distinct from each other because 10/999,581 provides all the features required by the claims of the present application and more. For example, in claim 9 (which depends on claims 1 and 8) of 10/999,581 all of the same features as claim 1 of the present application (1000 mm of claim 9 is greater than 80 mm, for example) are required and a further requirement as to the forming of a low

resistance electrical connection is made, and this formation is not prevented by the present claims. The difference of the adherence and increased time and temperature would be inherent from using the described device. As to the injecting the particles parallel to a longitudinal axis of the gas/powder exchange chamber (claim 6 of the present application), the velocity of acceleration (claim 9) and the substrate material (claim 10), it is the Examiner's position that this is well known in the art of kinetic spraying to be the conventional direction of injection, velocity and substrate material. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

5. In the amendment of May 4, 2007, as to the outstanding provisional double patenting rejections, applicant notes that although Terminal Disclaimers have not been submitted, applicant is prepared to submit such Terminal Disclaimers in the future upon an indication of allowable subject matter. The Examiner has reviewed this statement, and the provisional double patenting rejections above are maintained as no Terminal Disclaimer or arguments against the rejection have been provided.

Claim Rejections - 35 USC § 112

6. The rejection of claim 23 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement is withdrawn due to the cancellation of claim 23 in the amendment of May 4, 2007.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1-6, 8-10, 21, 22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Steenkiste et al (US 6283386) in view of Kay et al (US 2001/0042508).

Claim 1: Van Steenkiste teaches a method of kinetic spray coating a substrate. Column 1, lines 10-15. Particles of a powder are provided. Figure 2 and column 3, lines 30-65. Van Steenkiste notes that kinetic spray coating is also known as cold gas dynamic spray coating. Column 1, lines 15-25. The particles are injected into a gas/powder exchange chamber (the mixing chamber 42) and entrained into a flow of main gas in this chamber. Figure 2 and column 3, lines 30-65. The main gas is at a temperature insufficient to heat the particles to a temperature above a melting temperature of the particles. Column 3, lines 30-65 and column 2, lines 1-5. The particles entrained in the main gas in the gas/powder exchange chamber can be considered to be directed first into a gas/powder exchange chamber and then into a "downstream" gas/powder conditioning chamber that exits further down the length of the chamber, as the "mixing chamber 42" can be described as both chambers as no structural difference or wall between the exchange chamber and conditioning chamber is required as claimed. Figure 2 and column 3, lines 30-65. The passage of the particles through the "conditioning" part of the chamber increases a residence time in that named part of the chamber, since if it was not there, no residence time would be possible. Furthermore, the passage through the "conditioning" part of the chamber also increases the temperature of the particles since the particles are heated by the hot air in

that part of the chamber. The particles entrained in the flow of gas from the "conditioning" chamber are directed into a converging diverging supersonic nozzle, thereby accelerating the particles to a velocity sufficient to result in adherence of the particles on a substrate positioned opposite the nozzle. Figures 1-2 and column 3, lines 55-65.

Claim 2: the particles can be a metal, alloy, polymers, ceramic or semiconductor. Column 1, lines 55-60 and column 4, lines 25-30.

Claim 3: the particle diameter can be 1-106 microns. Column 4, lines 10-30 and column 5, lines 25-55.

Claim 5: the main gas temperature can be 900 degrees F (approximately 482 degrees C) , for example. Column 4, lines 45-50.

Claim 6: the particles are injected parallel to a longitudinal axis of the gas/powder exchange chamber (mixing chamber). Figure 2.

Claim 9: the particles can be accelerated to about 1000 m/sec. Column 1, lines 65-68.

Claim 10: the substrate can be a metal alloy. Column 4, lines 35-40.

Claim 22: the main gas can flow through a "flow straightener" before entering the exchange chamber, and thus the exchange/conditioning chamber is downstream of the flow straightener and upstream of the nozzle. Figure 2 and column 3, lines 40-65 (see flow straightener 40).

Van Steenkiste teaches all the features of these claims except (1) the length of the conditioning chamber (claims 1,8), (2) injection pressure (claim 4), (3) the amount of temperature increase (claims 1, 21, 23) and (4) the releasable housing portions (claim 24). Van Steenkiste does teach that it was believed that a threshold velocity should be reached in order for the particles to desirably adhere to the substrate, and that the velocity achievable is related to the air temperature. Column 4, line 60 through column 5, line 15. Van Steenkiste further reasoned that reducing the flow of unheated powder feeder air relative to the heated main air flow that accelerates the particles provides that the resulting temperature of the mixed air flow through the nozzle is then greater and provides higher air velocities to accelerate larger particles to the threshold velocity, resulting in better adhesion. Column 5, lines 1-20. As to the injection pressure, Van Steenkiste teaches that the air is fed using a high pressure powder feeder from an original air compressor capable of supplying air pressure up to 500 psi. column 3, lines 30-40. As to the amount of temperature increase, Van Steenkiste shows exposing the particles to air heated to 900 degrees F. Column 5, lines 25-45.

Kay teaches an apparatus and method of kinetic spray (cold gas dynamic spraying) coating a substrate. Paragraph [0001]. Particles of a powder, which can be a metal, alloy or polymer, are provided. Figures 1-2 and paragraphs [0001] and [0016]. The particles are injected into a gas/powder exchange chamber (the mixing chamber 15) and entrained into a flow of main gas in this chamber. Figure 2 and paragraph [0016]. The main gas is at a temperature insufficient to heat the particles to a

temperature above a melting temperature of the particles. Paragraphs [0001] and [0016]. The particles entrained in the main gas in the gas/powder exchange chamber can be considered to be directed into a gas/powder conditioning chamber, as the "mixing chamber 15" can be described as both chambers as no structural difference or wall between the exchange chamber and conditioning chamber is required as claimed. Figure 2 and paragraph [0016]. The particles entrained in the flow of gas from the "conditioning" chamber are directed into a converging diverging supersonic nozzle, thereby accelerating the particles to a velocity sufficient to result in adherence of the particles on a substrate positioned opposite the nozzle. Figure 2 and paragraphs [0001] and [0016]. Kay teaches to control the length of extending portion 13 of the gas entrained powder through powder feed tube 7 into the mixing chamber 15 to fine tune performance characteristics of the system. Paragraphs [0016] and [0020]. Changing the point of entry of the powder from the tube would change the length of the "conditioning chamber" as the powder would travel a different length after being "entrained". Kay also teaches that a high pressure gas stream is used to feed the gas into the system. Paragraph [0015] and figure 1. As to the apparatus of the exchange chamber and conditioning chamber, Kay provides rear housing 1 and front housing 3 disposing between the rear housing 1 and the nozzle holder 5/nozzle 6. Figure 2 and paragraph [0016]. The housings and nozzle holder 5/nozzle 6 are all releasably connected together using nuts 21/bolts 23 to attach housings 1 and 3 and nuts/bolts 19 attaching nozzle holder 5/nozzle 6 to housing 3. Figure 2 and paragraph [0019]. As

shown the mixing chamber 15 would be within both housing 1 and housing 3 as claimed in claim 24.

It would have been obvious to one of ordinary skill in the art the time the invention was made to modify Van Steenkiste to perform routine experimentation to optimize the length of the mixing chamber (and thus, also the "conditioning chamber") as suggested by Kay in order to optimize the performance characteristics of the system, because Van Steenkiste provides that the air temperature is directly related to the air velocity reachable in the supersonic nozzle, and achieving higher air temperatures allows for achieving higher velocity in the nozzle and greater adhesion of particles, and Kay further indicates that controlling the entry point of the powder nozzle (changing the length of powder passage through the "mixing chamber") should be optimized to fine tune performance characteristics of the system. The longer the powder passes through the mixing chamber/conditioning chamber, the longer for the mixture of air (the unheated powder feed air and the heated main air) to become heated (as the unheated powder feed air is heated by the heated main air) to an equilibrium temperature and allow for maximum velocity, thus providing that the mixing chamber/conditioning chamber should be as long as possible to provide the optimum air temperature. While applicant provides benefits of using a conditioning chamber as claimed, these benefits would be suggested by the desire provided by the references to provide a long mixing chamber. It would further have been obvious to modify Van Steenkiste in view of Kay to perform routine experimentation to optimize the amount of

pressure that the injected particles are provided at above the pressure of the main gas because Van Steenkiste and Kay both teach to provide the injected particles using a high pressure feeder and it would be clear to one of ordinary skill in the art that the pressure of the feeder should be above the pressure of the main gas to prevent backflow into the feed tube but low enough to provide for optimum entraining, so one of ordinary skill in the art would optimize the pressure amount so as to prevent this backflow and still allow for desirable entraining of particles and main gas. As to the amount of increased temperature in the particles during exposure to heated air in the conditioning chamber, it would have been obvious to modify Van Steenkiste in view of Kay to perform routine experimentation to optimize the time that the particles are heated to so as to provide reaching optimum threshold velocity of the particles for optimum adhesion, and the time of heating would provide the amount of temperature increase. As to the housing portions and releasable engagement of claim 24, it would have been obvious to modify Van Steenkiste to provide such as system as shown by Kay, in order to allow for easy and quick disassembly, cleaning and reassembly of the gun because Van Steenkiste teaches a kinetic spraying system and Kay teaches the desire when providing a kinetic spray system to provide housings in releasable engagement as claimed in order to allow for easy and quick disassembly, cleaning and reassembly of the gun.

10. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Van Steenkiste in view of Kay as applied to claims 1-6, 8-10, 21, 22 and 24 above, and further in view of Schwarz et al (US 5273957).

Van Steenkiste in view of Kay teach all the features of these claims except the angled entry of the particles.

However, Schwarz teaches that when spraying particles through a nozzle system onto a substrate, it is well known to also provide the particles at an angled entry prior to the spray nozzle. See figures 1-2 and column 4, lines 30-55.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Van Steenkiste in view of Kay to provide for angled entry of the particles as well as longitudinal entry as suggested by Schwarz with an expectation of providing a desired flow of particles, because Van Steenkiste in view of Kay wish to entrain particles into a flow of gas and Schwarz teaches that particles can also be entrained into a flow with an angled entry. While Schwarz goes on to melt the particles, the initial entraining remains the same whether the particles are melted or not.

11. Amateau, et al "High-Velocity Particle Consolidation Technology", iMAST Quarterly 2000, No. 2, pages 3-6 describe conditions for kinetic spraying (called High-Velocity Particle Consolidation in the article, but referring to "kinetic" spraying, see the description at column 1, page 3). This article notes that the air/gas velocity is 300-1200 m/s leaving the nozzle, while the particle velocity is only 180-1000 m/s (not the same as

the air velocity. See page 3, columns 1-2. Moreover, the heating of the gas increases the gas (air) velocity and increases the particle temperature. Page 3, column 2. Heating the particle increases the ductility of the particle and both effects (gas velocity and particle temperature increase) improves the deposition efficiency. Page 3, column 2.

Response to Arguments

12. Applicant's arguments filed May 4, 2007 have been fully considered but they are not persuasive.

Applicant argues at pages 6-8 of the Remarks that as to the 35 USC 103 rejection that Van Steenkiste and Kay lack the claimed conditioning chamber with a length equal or greater to 80 mm. Applicant notes that the inventive significance of at least 80 mm length is easily realized with reference to Figure 4 and paragraph [0041] of the present case, where the increase in temperature of the particles due to the existence of the conditioning chamber as compared to a system that only has an exchange chamber going directly to a nozzle, such as in Van Steenkiste and Kay can be realized. Applicant notes that in the Feb. 5, 2007 Office Action, the Examiner took the position that the combination of Van Steenkiste and Kay " provides the suggestion to optimize the length of [a gas/powder exchange chamber], which would include providing a new system with an optimized longer length." Applicant notes the position of the Examiner as to Van Steenkiste suggesting the an increase in overall gas temperature equates to an increase in velocity for the particles and, thus, higher deposition temperatures.

However, applicant argues that no one has previously provided a longer chamber, for several possible reasons, including heat loss to ambient, pressure drops due to increased wall friction, and the like. Furthermore, applicant notes that page 15, paragraph 0048 of the subject application indicates that increasing the length of the chamber would not provide corresponding gas temperature and particle velocity increases, since paragraph 0048 indicates that there was almost no change to the particle velocity upon exit from the nozzle 54 under either of the conditions (condition chamber length of L=0 mm or L=240 mm), which explains why one skilled in the art would not be motivated to increase the length of the prior art exchange chambers. Rather, in paragraph 0048, the inventors state that "it is believed that the majority of the increase in deposition efficiency is due to the increase in the particle temperature caused by the presence of the powder/gas conditioning chamber 80. Therefore, there is no suggestion provided by the combination of Van Steenkiste and Kay to increase powder/gas exchange chamber length to increase particle velocity.

The Examiner has reviewed these arguments, however, the rejection is maintained. As discussed in the rejection above, Van Steenkiste indicates that air temperature that the particles are exposed to is directly related to the air velocity reachable in the supersonic nozzles, and that one problem with this air temperature is the addition of a flow of unheated air when the particles are provided (see column 5, lines 1-15). While Van Steenkiste does not teach to increase the particle temperature by providing a conditioning chamber or increasing the length of the conditioning chamber

so that residence time is increased, the Examiner has (1) noted that the exchange chamber of Van Steenkiste reads on an exchange chamber followed by a conditioning chamber as the "mixing chamber 42" of Van Steenkiste can be described as both chambers as non structural difference or wall between the exchange chamber and conditioning chamber is required as claimed. Thus, the claimed "conditioning chamber" length can be considered the downstream portion of the chamber 42 of Van Steenkiste, as long as the chamber 42 has sufficient length, and (2) has cited Kay which indicates that the entry point of the powder feed tube 7 into mixing chamber 15 can be changed to fine tune performance characteristics of the system. The Examiner has provided that it would have been obvious to provide the longer length of flow through the chamber in Van Steenkiste by adjusting the particle entry point as suggested by Kay to fine tune performance characteristics, because the longer the powder passes through the mixing chamber/conditioning chamber, the longer for the mixture of air (the unheated powder feed air and the heated main air) to become heated (as the unheated powder feed air is heated by the heated main air) to an equilibrium temperature and allow for <u>maximum air velocity</u>, thus providing that the mixing chamber/conditioning chamber should be as long as possible to provide the optimum air temperature. In other words, the use of a long chamber is suggested in order to provide a <u>high air temperature</u>, which is explicitly desired by Van Steenkiste (higher air temperature is noted as being explicitly desired, not length, which is suggested by the combination of references). The fact that applicant has recognized another advantage which would

flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). In the present case, changing the point of entry of the powder would change the length of the "conditioning" chamber as the powder would travel a different length after being entrained (note the discussion in the rejection above, as to how the mixing chamber can be considered the exchanging chamber and the connected conditioning chamber). As the length that the particles flow increases, the particles would inherently have increased residence time and increased temperature as compared to a flow of less length due to the exposure of the particles to the heated air for a longer time. As to the specific length of the conditioning chamber as being over 80 mm, this would be provided by the routine experimentation to optimize the length of flow as discussed the rejection above. Applicant has provided no showing of unexpected benefits in regards to the particular length claimed, only that expected increased adherence benefits would be provided, which would also be expected with the longer length for the reasons of equalizing air temperature. Applicant makes reference to paragraph 0048 as showing that there was almost no change in the "particle velocity" when the longer conditioning chamber is used, which, according to applicant, goes against the Examiner's position. The Examiner has reviewed this argument, however, the Examiner notes that Van Steenkiste refers to providing "higher air velocities" to accelerate the particles to "the threshold velocity" (see column 5, lines 5-15), which appears to be a specific velocity (see column 4, line 64

through column 5, line 5) that is not the same as the air velocity. Thus, the higher air temperatures from the process suggested by Van Steenkiste means that more particles will achieve the specific threshold velocity, not that the particles necessarily go beyond that velocity. Therefore, the teaching of paragraph 0048 does not contradict Van Steenkiste.

As to dependent claim 24, the Examiner notes, that as discussed in the rejection above, Kay teaches the use of first and second housings and releasable engagement that reads on the claim as worded.

Conclusion

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katherine A. Bareford whose telephone number is (571) 272-1413. The examiner can normally be reached on M-F(6:00-3:30) with the First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone numbers for the organization where this application or proceeding is assigned are (571) 273-8300 for regular communications and for After Final communications.

Other inquiries can be directed to the Tech Center 1700 telephone number at (571) 272-1700.

Furthermore, information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kath B

KATHERINE BAREFORD
PRIMARY EXAMINER